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Summary report

**Fungicides for light leaf spot control in  
winter oilseed rape**

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Summary of AHDB fungicide projects

2010–24 (RD-2007-3457), 2015–18 (214-0006) and 2019–22 (21120013)

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## **Background**

Fungicides for control of light leaf spot have been evaluated over the last ten years at ADAS High Mowthorpe, North Yorkshire, by SRUC near Edinburgh, Midlothian or in Aberdeenshire and from 2015 to 2017 there was an additional site with NIAB in Dorset.

All trials are carried out on phoma stem canker resistant and light leaf spot susceptible varieties (usually AHDB Recommended List ratings for the target disease of 5 or below – a variety with a rating of 6 was used at the Dorset site in 2017, as an alternative was not available). Since 2014, all new and existing products are tested at four doses ( $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and full recommended label rate) and compared with a completely untreated control.

All products were applied as two spray programmes; a first application in the autumn (usually November) with a second application at or during early stem extension (February/March). Leaf disease assessments are done after each application and stems and pods assessed pre-harvest. Yield data are adjusted to 91% dry matter. Priority for inclusion for testing in this project is given to products not currently approved, to allow independent data to be available when they come to market.

Data in this report starts from 2015 onwards and focuses on the efficacy of products that have recently been approved for use in oilseed rape. Other historic data are available on the AHDB website.

[ahdb.org.uk/fungicide-performance](http://ahdb.org.uk/fungicide-performance)

Note: the product name for Angle (difenoconazole + azoxystrobin) is now Priori Gold.

## **Harvest year 2020**

Filan and Angle were included in the trials conducted in the 2018/19 and 2019/20 seasons. Neither product has a label recommendation for light leaf spot, however, as they are likely to be used when control of this disease will be required, the information is presented here. Fungicides were applied on 2 December 2019 and 5 February 2020 to cv. Fencer at the trial site near Malton, North Yorkshire and 3 December 2018 and 5 February 2019 at the trial site near Edinburgh, Midlothian. In North Yorkshire c. 8% leaf area was affected in untreated plots in mid-March.

Data from North Yorkshire and Edinburgh from the 2019 and 2020 trials was combined and a cross site analysis conducted. All treatments significantly reduced light leaf spot compared to the untreated control, with all products performing similarly (Figure 1a). Yield responses to fungicide application (untreated control = 3.70 t/ha) ranged from 0.4 to 0.5 t/ha, with both application timings showing a contribution to yield (Figure 1b).

A further cross site analysis was conducted using data from all trials conducted from 2015 to 2020. These showed that Proline, Plover, Angle, Aviator and Filan performed similarly against light leaf at the 50% of the recommended label rate, decreasing the severity from 5.9% to between 2.8 and 3.5%. Cross site analysis showed that yield response with fungicide for 50 to 100% dose rate for all products was 0.3 to 0.4 t/ha (untreated = 3.60 t/ha) (Figure 2).

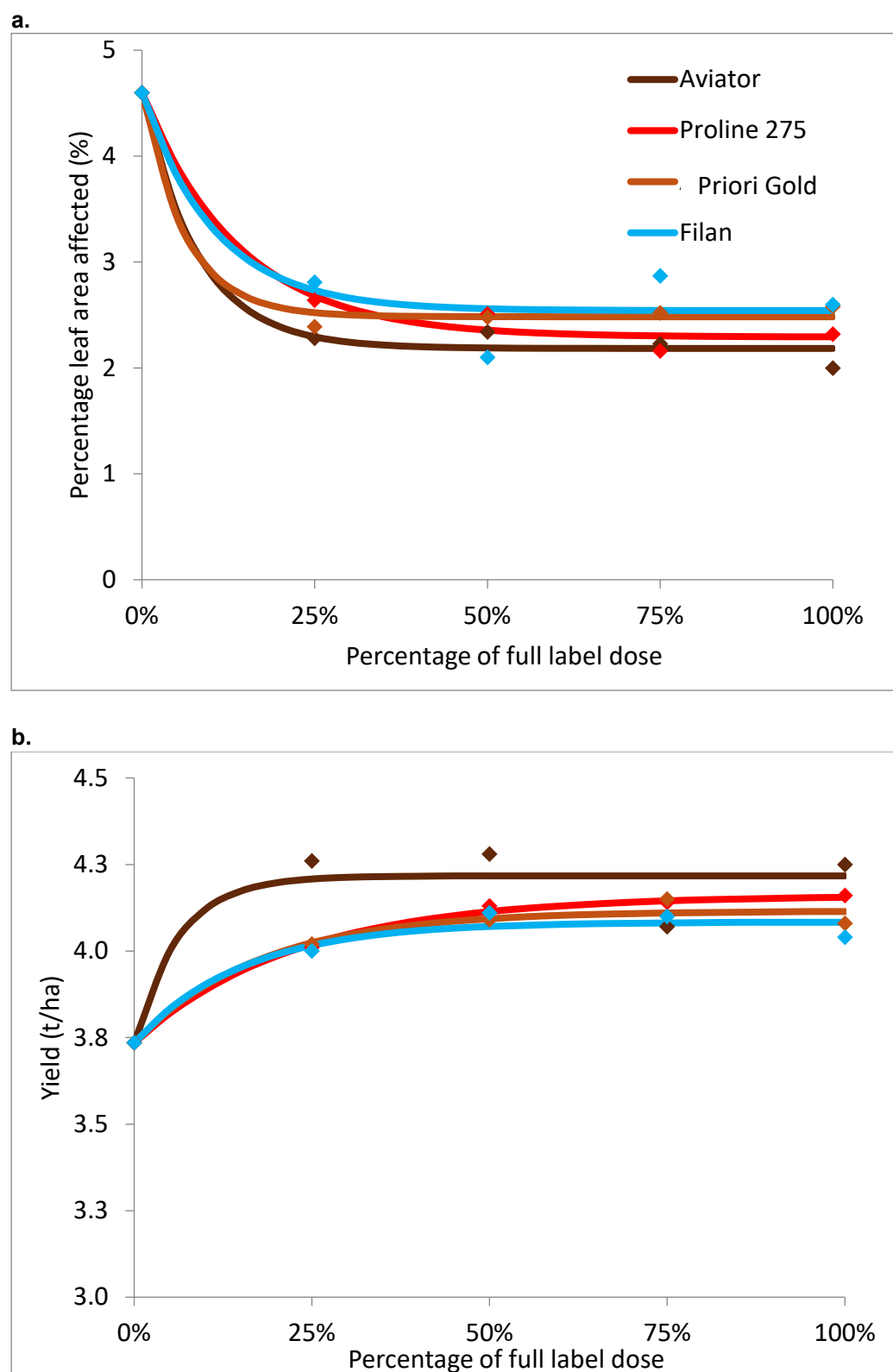


Figure 2. Light leaf spot severity control (a.) and yield (b.) response, at 91% dry matter in relation to fungicide dose in four trials conducted 2019 and 2020. Note: Neither Filan and Angle has a label recommendation for light leaf spot, however, as they are likely to be used when control of this disease will be required, the information is presented.

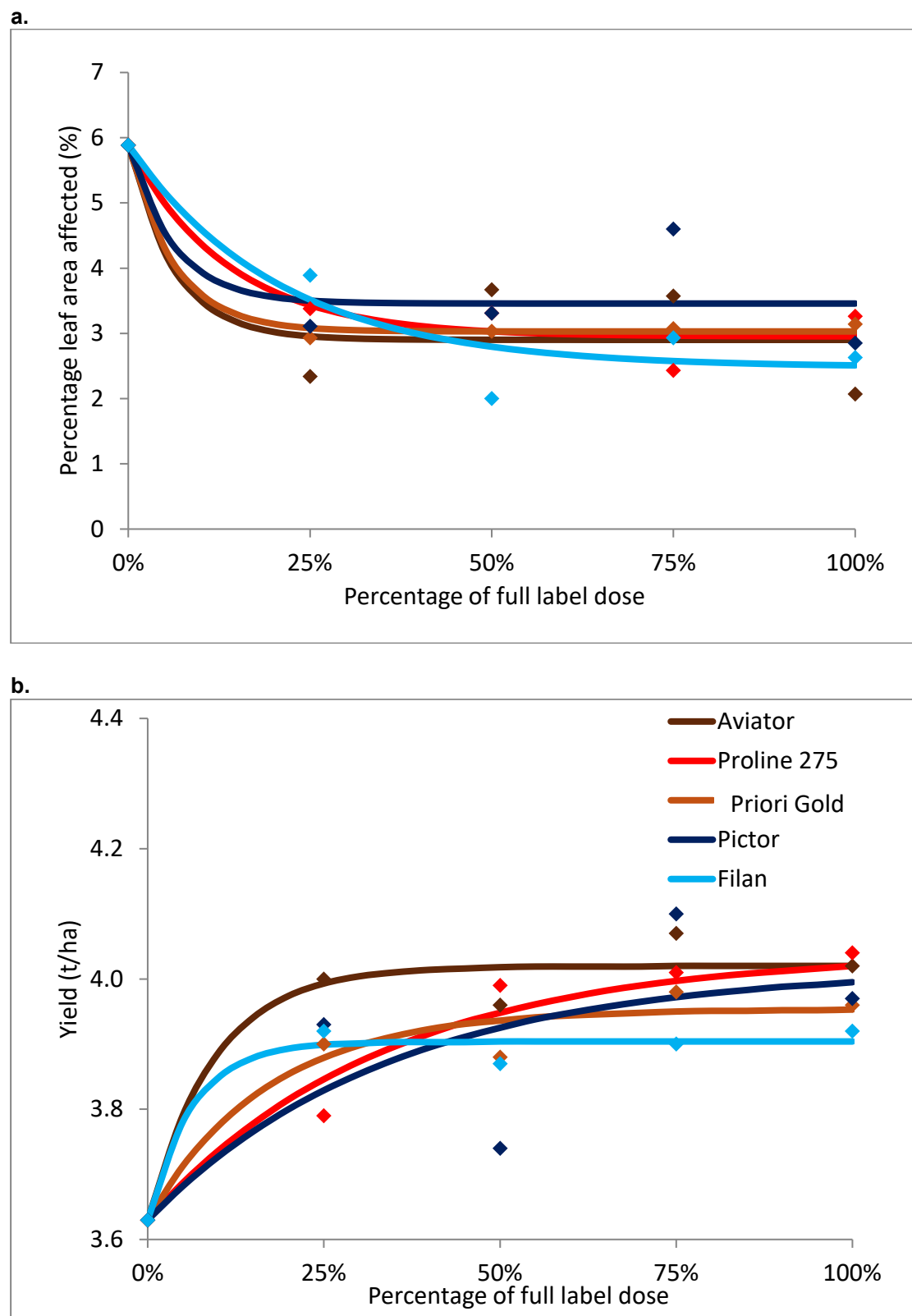


Figure 3. Light leaf spot severity control (a.) and yield (b.) response, at 91% dry matter in relation to fungicide dose in trials conducted 2015 to 2020. Note: Neither Filan and Angle has a label recommendation for light leaf spot, however, as they are likely to be used when control of this disease will be required, the information is presented.

## Assessing and managing light leaf spot risk in harvest year 2021

Light leaf spot incidence has been moderate for the past two years compared to previously observed levels. The latest light leaf spot forecast for 2020/2021 indicates a low risk across Scotland, Wales and most of England, however, disease symptoms on susceptible varieties in early November 2020 have been noted. Air-borne spores are produced on the previous year's crop debris therefore the presence of pod and stem lesions in previous crops increases the risk on farm as the disease develops on crop stubbles and debris. Note that late emerging crops may be less severely affected than earlier sowings.

Use a spray in autumn (November) at high risk sites. After the autumn treatment, inspect crops regularly on a field-by-field basis for light leaf spot from January onwards. If phoma sprays are being used, check crops in winter and early spring to determine if phoma sprays have given adequate control of light leaf spot. Treatment timing is important: be prepared to apply fungicide as soon as light leaf spot is found (weather conditions permitting). Prior to stem extension, there is no threshold so it is therefore necessary to react to the presence of light leaf spot by spraying as soon as it is seen. Note product restrictions in relation to application date and growth stage when considering options at this timing.

### Summary – key points for light leaf spot control

Where light leaf spot is known to have been a problem in recent years, consider using more resistant varieties (resistance rating of at least 6) in future. Non-azoles are now available for light leaf spot control which is important for fungicide resistance management and it is recommended that a range of products representing different modes of action groups are used throughout the fungicide programme. This includes timings where light leaf spot is not the main target but is likely to be present.

Strains of light leaf spot with decreased sensitivity to azoles have been reported in the UK. An [AHDB project](#) completed in 2020 has confirmed that, although these strains are present, they are not reducing the effectiveness of azoles against light leaf spot in the field. Their presence emphasises the need to implement resistance management strategies.

There are opportunities to use azole/non-azole co-formulations and mixtures in the autumn as well as non-azole products at other points in the programme e.g. for sclerotinia control as part of a resistance management strategy. The latest [oilseed rape fungicide resistance management guidelines](#) are available. Using a range of different modes of action throughout the fungicide programme is necessary as part of a robust fungicide resistance management strategy to prevent the selection for fungicide insensitive strains.

Recent fungicide performance experiments indicate that complete control of light leaf spot is difficult to achieve. Typically 50 to 60% control is observed but this is providing yield responses of over 0.5 t/ha on susceptible varieties. There are prospects for improving control through better fungicide timing, as many crops are treated too late when the disease is already well established. Early detection and treatment in January/February (where conditions allow) will also provide further control and this earlier timing is more effective than treating heavily diseased crops at the stem extension stage.

Yield increases in response to product dose were variable between sites and years. Optimum dose is very site and situation specific and will depend on variety resistance rating, crop growth and disease pressure. For increased efficacy at high disease pressure sites, higher doses may be necessary, but this does not always translate into yield responses in the trial series.